

**CHIROPRACTORS REGISTRATION BOARD OF VICTORIA
STANDARDS OF PRACTICE CODES**

SURFACE ELECTROMYOGRAPHY (sEMG)

SEPTEMBER 2008

The Board has for some time been concerned about the use of Surface Electromyography (sEMG) in the clinical practice of Chiropractic. The Board perceives that the welfare of the public may be placed at risk in 3 key areas:

1. When sEMG is used in advertising, marketing and patient education.
2. When sEMG is used in clinical decision making.
3. The perceived value or status of sEMG by the unsuspecting public

The Board has received several complaints from the public, which in part, relate to issues of Unprofessional Conduct and in particular, “ providing a person with health services of a kind that are excessive, unnecessary or not reasonably required for that person's well-being”. In these complaints sEMG was used as a diagnostic instrument as a determinant for the requirement for initial or ongoing chiropractic care.

The concerns of the Board emanate from how and for what sEMG is used in chiropractic clinical practice. It is the Board’s view that sEMG is often marketed and promoted by both practitioners and the manufacturers (1,2) of these instruments as an objective measure of some aspects of spinal health, principally, muscle tone balance. *(a review of various Victorian chiropractors websites substantiates this statement)* Chiropractors typically utilise sEMG to identify areas of spinal muscle hypertonicity, which are thought to be associated with functional pathobiomechanical disorders of the spine, such as vertebral subluxations.

It is understandable that an uniformed public, when presented with the type of sophisticated and graphic presentation produced by these machines, could be led to believe that this presentation is an accurate depiction of the status of their spinal health. Similarly, a chiropractor not conversant with the scientific literature on sEMG may also believe that sEMG will provide the user with accurate, objective, reliable and valid data on spinal muscle tone, particularly aberrant tone associated with functional pathobiomechanical disorders of the spine, such as vertebral subluxations. However, in the opinion of the Board, as typically used by chiropractors in a clinical setting, sEMG lacks the necessary reliability and validity required for this usage.

The Board in its deliberations recently commissioned an extensive literature review to investigate the reliability and validity of sEMG in the assessment of functional biomechanical disorders of the spine. (3) The Board also reviewed several previously commissioned reports on sEMG use by chiropractors, (4,5,6) reviewed the scientific literature relating to its reliability and validity (7-14) as well reviewed international guidelines and protocols on the use of sEMG (15-18)

The scientific literature suggests that both static and dynamic fixed electrode sEMG, when used in accordance with well established protocols may have some clinical value in the identification of certain conditions such as chronic low back pain or

certain neurological disorders, including analysis of movement disorders, for differentiating types of tremors, myoclonus, and dystonia. (7,19)

However, the Board concludes that, currently, there is a paucity of good quality evidence to support the use of sEMG by chiropractors as a diagnostic tool for clinical purposes in the assessment of functional biomechanical disorders of the spine, including the detection of vertebral subluxations or muscle imbalances thought to be associated with such disorders.

Therefore the Board issues the following Code of Practice:

- That the use of static and dynamic sEMG in clinical chiropractic practice should be confined to conditions in which the instrument has been shown to have acceptable levels of reliability and validity, such as the identification of individuals suffering from chronic low back pain and certain neurological conditions.
- That where sEMG is used for the above purposes that it be done in accordance with accepted protocols that include, but is not limited to, adequate skin preparation, correct electrode placement, normalization, electrical interference shielding etc (19-23) (*Copies of the papers outlining accepted protocols are available on request from the Board.*)
- That sEMG should not be used as a tool for the diagnostic or prognostic evaluation of chiropractic subluxations, spinal health, spinal wellness or any other neuro-patho-mechanical syndrome as it may also place the public at risk of receiving a misdiagnosis, inappropriate treatment or treatment not necessarily required for their health and well-being.
- That sEMG should not be used in advertising, marketing or patient education for the purposes of evaluation of chiropractic subluxations, spinal health, spinal wellness or any other neuro-patho-mechanical syndrome as it may place members of the public at risk of being misled or deceived as to the status of their spinal health.

References

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